TOYOTA-RELIANCE AC HYBRID
MILESTONE SUMMARY

10/79 TOYOTA APPROVED JOINT DEMONSTRATION PROGRAM. SECOND GENERATION ACS DESIGN INITIATED.

1/80 EEI APPROVED JOINT PROGRAM.

2/80 ACS/MOTOR DYNAMOMETER TESTING INITIATED. ACS COOLING CAPACITY INCREASED.

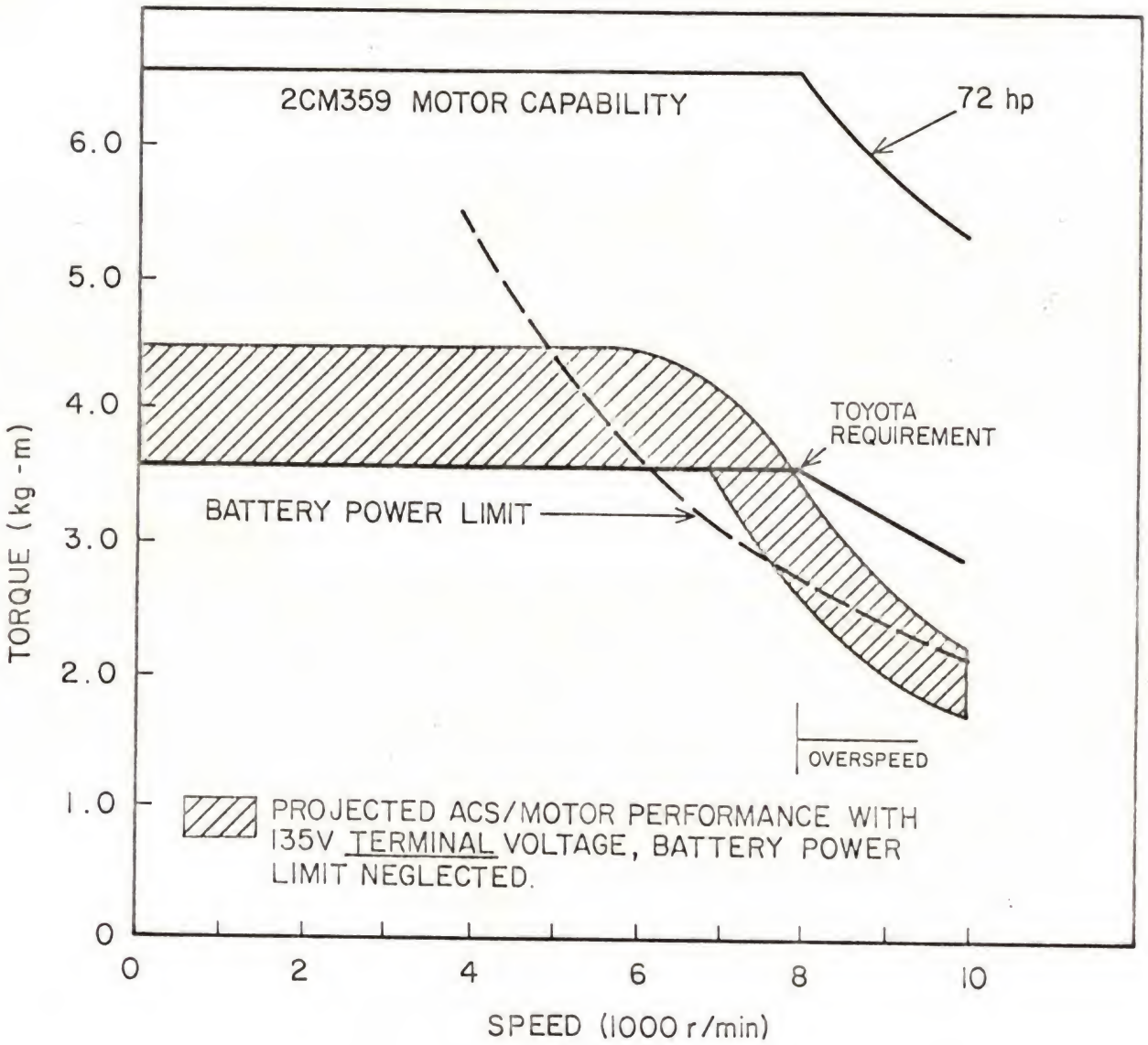
3/80 ALL ACS ACTIVITIES TRANSFERED TO RELIANCE ELECTRIC CO., COMMITMENT TO JOINT PROGRAM CONFIRMED.

4/80 LOCKED-ROTOR TORQUE >5.0kg-m DEMONSTRATED WITH HYBRID CORDOBA MOTOR. BATTERY TERMINALS MODIFIED AS A RESULT OF HIGH DISCHARGE TESTING.

5/80 USING HYBRID CORDOBA MOTOR, REQUIRED TORQUE PRODUCED UP TO 7,000 r/min. RELIANCE AGREED TO PROVIDE MOTOR COOLING, LUBRICATION, AND TO DEVELOP SIMPLE POWER MIXING CONTROL.

6/80 ACS CONTROLS DEMONSTRATED FOR:
MOTORING, GENERATING, OVERSPEED, LOW BATTERY VOLTAGE AND OVER TEMPERATURE.
2CM359 AC MOTOR RECIEVED AND MODIFICATIONS BEGUN

AC HYBRID
ELECTRIC DRIVE PERFORMANCE



PROPRIETARY

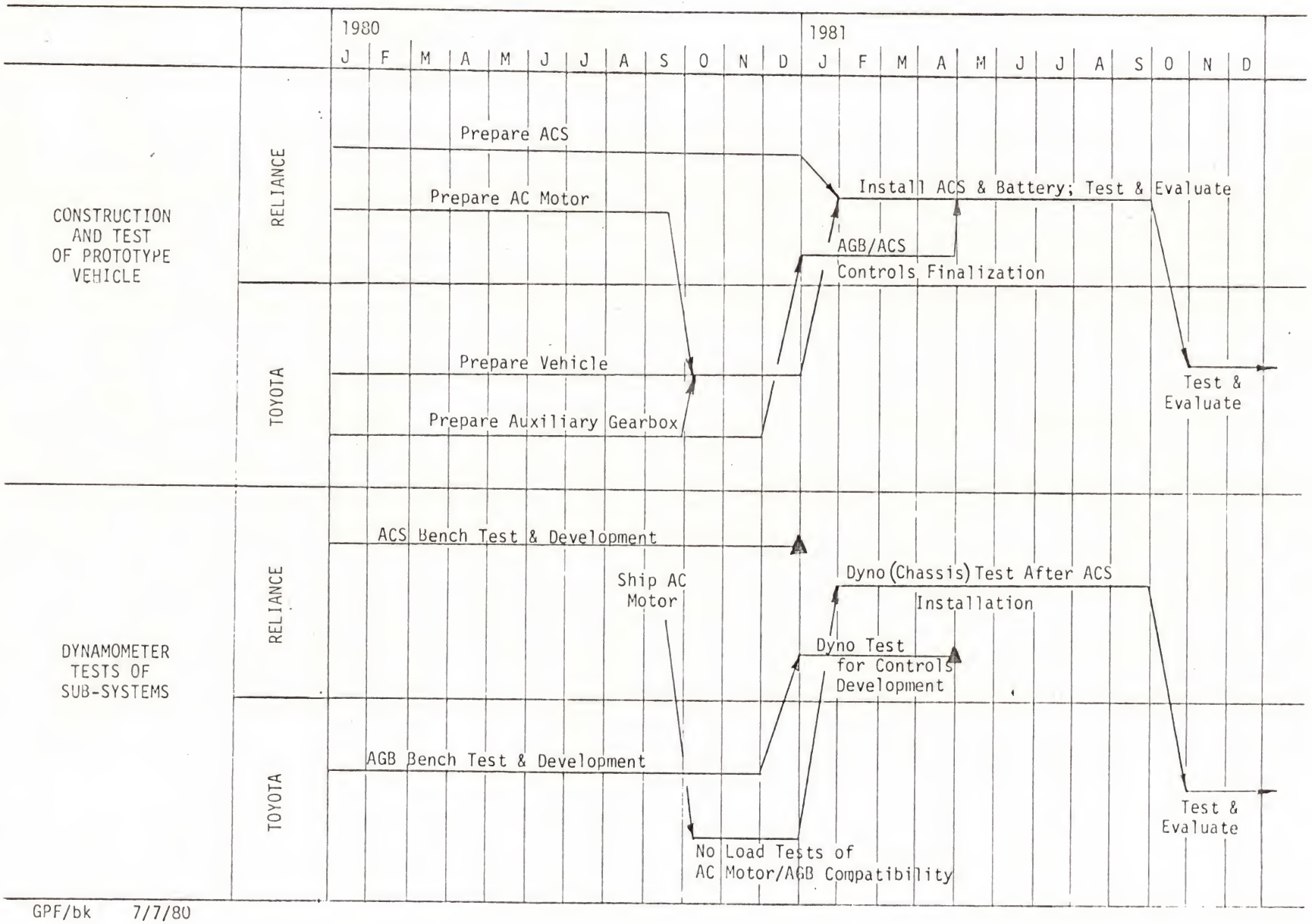
JOB ALLOCATION
HYBRID VEHICLE CONTROL SYSTEM

	PRODUCED OR DEVELOPED BY	ASSEMBLED BY
SYSTEM FOR POWER MIXING SCHEDULE INCLUDING SELECTION OF POWERING/GENERATION MODE	RELIANCE ELECTRIC	RELIANCE ELECTRIC
CLUTCHING CONTROL SIGNAL GENERATION UNIT	TOYOTA	TOYOTA[1]
CLUTCHING SYSTEM	TOYOTA	TOYOTA
AUX. GEAR BOX	TOYOTA	TOYOTA
MOTOR/GENERATOR[2]	RELIANCE ELECTRIC	TOYOTA
MOTOR SPEED SENSOR	RELIANCE ELECTRIC	RELIANCE ELECTRIC[3]
MOTOR COOLING SYSTEM	RELIANCE ELECTRIC	RELIANCE ELECTRIC[4]
ACS AND ACS CONTROL CIRCUIT	RELIANCE ELECTRIC	RELIANCE ELECTRIC
BATTERY	RELIANCE ELECTRIC	RELIANCE ELECTRIC
HEAT ENGINE	TOYOTA	TOYOTA
ALL OTHER COMPONENTS FOR VEHICLE	TOYOTA	TOYOTA

NOTES:

1. WAS TOYOTA OR RELIANCE ELECTRIC.
2. MOTOR/GENERATOR WILL BE SUPPLIED TO TOYOTA WITH APPROPRIATE AGB FITTINGS AND SUPPORT BEARING. MOTOR LUBRICATION SYSTEM NOT REQUIRED.
3. WAS TOYOTA
4. WAS TOYOTA

Proposed Schedule For Joint Hybrid Vehicle Demonstration

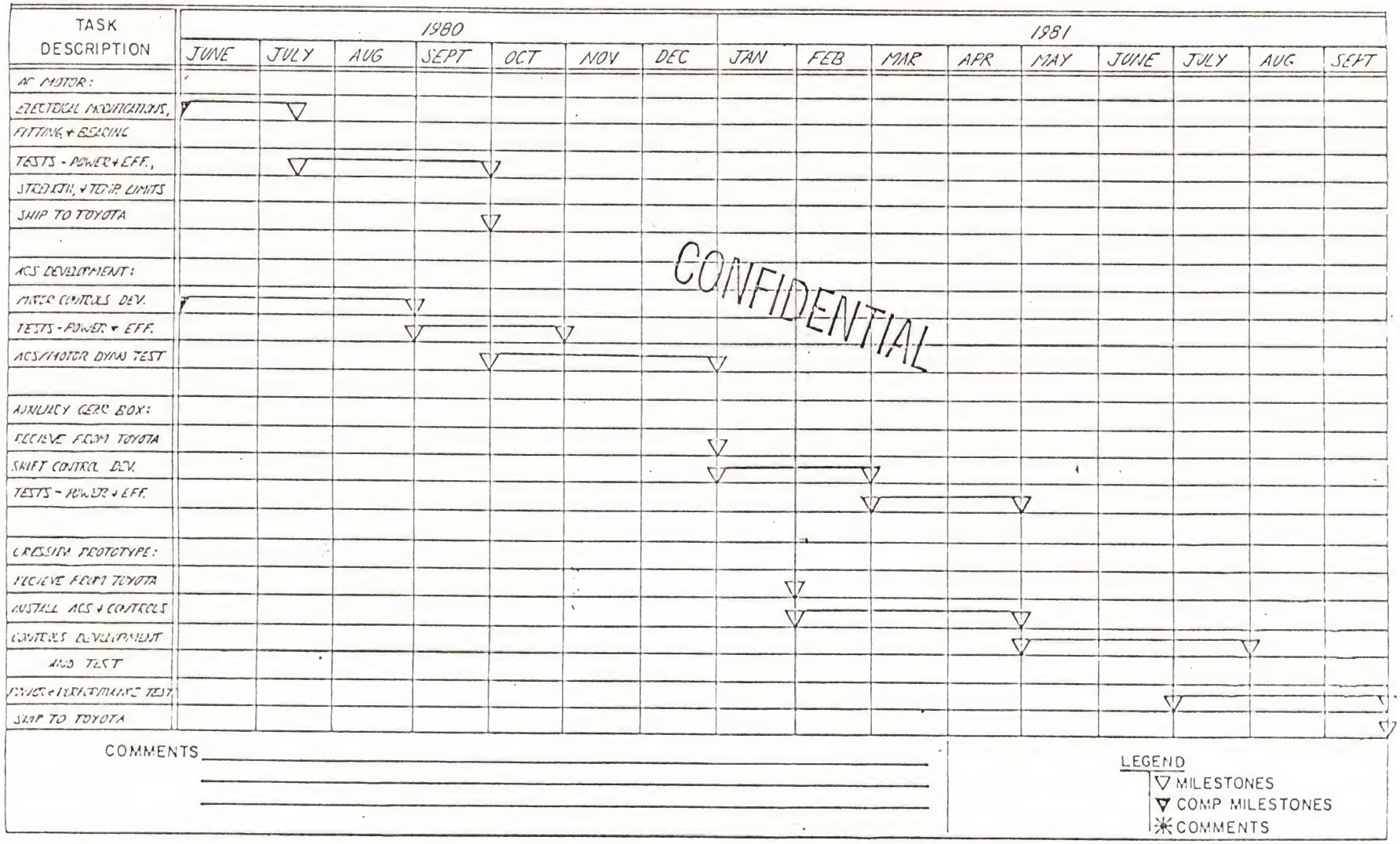


GPF/bk 7/7/80

• PROGRAM MILESTONE •

PROGRAM: HYBRID TOYOTA CRESSIDA – RELIANCE SCHEDULE
OBJECTIVE:

REPORT DATE
PREPARED BY 6-5-80



COMMENTS

LEGEND
- ▽ MILESTONES
- ▼ COMP MILESTONES
- ✳ COMMENTS